### **GLOBAL CLIMATE HIGHLIGHTS**

MAJOR CLIMATIC EVENTS AND ANOMALIES AS OF NOVEMBER 7, 1992

### 1. West-Central Alaska:

### TEMPERATURES MODERATE.

Temperatures were near normal across most of Alaska during the week, although isolated locations reported departures as low as -7°C [Ended at 17 weeks].

### 2. Western United States:

### WARM CONDITIONS ABATE.

Temperatures averaged up to 3°C above normal in California, but colder air overspread the Intermountain West [Ending at 6 weeks].

### 3. Central South America:

### LATE SEASON COLD SNAP DEVELOPS.

Most locations averaged 3°C to 7°C below normal as cold air invaded much of the continent [2 weeks].

### 4. Northern Europe:

### MORE BITTERLY COLD WEATHER.

Unseasonably chilly conditions persisted across the region as temperature departures sank to -11°C in parts of Sweden and Russia. Lows dropped to -29°C in northern Scandinavia, and to -45°C in northeastern European Russia [4 weeks].

### Southern Europe:

### RAINY WEATHER EASES.

Rains totaling 10 to 70 mm dampened most of the Mediterranean region. Poor visibility and runway flooding closed the international airport at Rome, Italy for several hours early in the week. Since ate September, 450 to 500 mm of rain soaked parts of northern Spain and Italy [6 weeks].

### 6. Southwestern Turkey:

### DRY WEATHER REMAINS.

Little or no precipitation was reported in the region as abnormall dry conditions continued. Since late September, deficits of 50 to 9 mm accumulated at some locations [31 weeks].

### 7. Eastern China:

### VERY DRY CONDITIONS CONTINUE.

Generally less than 20 mm of precipitation was reported, bu isolated showers near the Yangtze River yielded up to 60 mm o rain [18 weeks].

### 8. Vietnam:

### HEAVY RAINS END.

Only light to moderate rains fell on Vietnam. Totals were generally below 20 mm in the southern half of the country while up to 60 mm dampened some areas farther north [Ended at 4 weeks].

### 9. South-Central Australia:

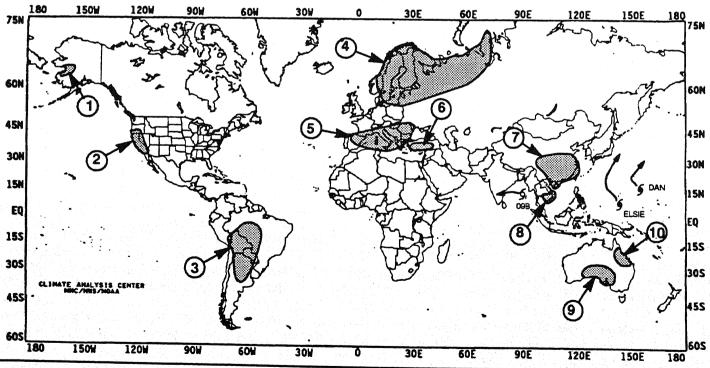
### WET WEATHER DIMINISHES.

Weekly precipitation totals were below 20 mm as the wet spell ended [Ended at 7 weeks].

### 10. Northeastern Australia:

### STILL DRY.

Little or no precipitation was reported as unseasonably dry weather persisted. Several stations received only 30% of normal precipitation during the past six weeks [7 weeks].



### EXPLANATION

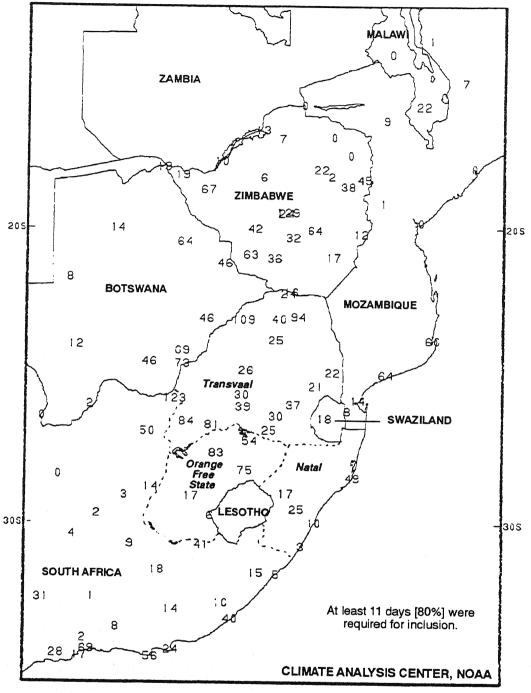
TEXT: Approximate duration of anomalies is in brackets. Precipitation amounts and temperature departures are this week's values.

MAP: Approximate locations of major anomalies and episodic events are shown. See other maps in this Bulletin for current two week temperature anomalies, four week precipitation anomalies, long-term anomalies, and other details.

### **GLOBAL CLIMATE HIGHLIGHTS FEATURE**

### **TOTAL PRECIPITATION (mm)**

October 26 - November 7, 1992 [13 days]



MODERATE TO HEAVY RAINS DAMPEN MUCH OF SOUTHEASTERN AFRICA AS 1992–1993 WET SEASON COMMENCES. Most of southeastern Africa is still reeling from the drought that gripped the region during the 1991–1992 wet season, which was the worst of the century in some areas. The exceptional dryness led to crop failures, power shortages, and near-famine conditions in some places that continued to afflict the region as the 1992–1993 wet season commenced. Fortunately, this season got off to a relatively good start, with widespread moderate to heavy rains moistening much of Zimbabwe, southern Mozambique, eastern and southern South Africa, and eastern Botswana during late October and early November. Rainfall totals of 20 – 65 mm fell on these areas during the thirteen–day period, with higher amounts (up to 123 mm) soaking parts of the northern and southwestern Transvaal, southeastern Botswana, and northern Orange Free State. Between 200% and 550% of normal was recorded in central and western Zimbabwe, eastern Botswana, western Transvaal, most of Orange Free State, and southern Mozambique. In contrast, only scattered totals of 10 – 35 mm fell on eastern Transvaal, Natal, Lesotho, Swaziland, western Botswana, northern and eastern Zimbabwe, and most of central and northern Mozambique.

### UNITED STATES WEEKLY CLIMATE HIGHLIGHTS

FOR THE WEEK OF NOVEMBER 1 - 7, 1992

The nation experienced a relatively wet week, with major storm systems dropping moderate to heavy precipitation on the northern half of the Far West, the central Rockies, the lower and upper Mississippi Valley, the Great Lakes, the eastern Corn Belt, the Southeast, the central and southern Appalachians, and the northern mid-Atlantic and lower Northeast. A powerful storm system buried parts of Minnesota under more than a foot of snow while a frontal system simultaneously dumped as much as three feet of snow on the central and southwestern mountains of Colorado. Farther south, conditions were more summer-like. Record-breaking daily high temperatures were observed in the Southeast, south Atlantic, and Florida while a series of low pressure systems formed along a slowly-moving frontal system across the Southeast, generating severe thunderstorms, heavy rains, strong wind gusts, and several tornadoes in portions of Texas, Arkansas, Louisiana, Alabama, North Carolina, and Florida (see page 4). Tornadoes or excessive wind gusts damaged several cars, trailers, trees, buildings, and parts of the Shreveport Regional Airport. In addition, rainfall totals for the week topped seven inches in portions of the Mississippi Delta, central Mississippi, and extreme western Florida, generating scattered flooding. Heavy rains engendered severe flooding in parts of Puerto Rico around mid-week as more than six inches of rain fell on parts of the island Wednesday. Another island territory of the United States, Guam, also endured heavy rains, gusty winds, and flooding as powerful Typhoon Elsie became the third tropical cyclone in ten weeks to affect the island. Fortunately, the brunt of Elsie missed Guam as the eye passed south of the island on Tuesday, but many businesses and schools were closed and elections were postponed as precautionary measures. Guam was devastated by Typhoon Omar in August, enduring \$500 million in damage, and Typhoon Brian brought minor flooding and structural damage to the territory on October 20.

The week began with a strong low pressure center over Missouri that headed northeastward, passing through the western Great Lakes late Monday. This system spread heavy precipitation through much of the north-central states, upper Mississippi Valley, Corn Belt, and Great Lakes. Over half a foot of snow blanketed parts of the eastern Dakotas while up to thirteen inches buried the Minnesota Arrowhead. Farther south, the storm system's trailing cold front stretched southward across the lower Mississippi Valley. During the next two days, the northern part of this front pushed quickly eastward while the southern end remained stationary through the Southeast. A series of low pressure systems developed along the stationary front, generating several thunderstorm outbreaks through the Southeast and central Gulf Coast during Sunday, Tuesday, and Wednesday. Farther west, cold air plunged southward behind the Great Lakes' storm system into the Rockies and Plains. Cold air sank far enough south to allow some light snow to fall in northern Mexico west of the Big Bend of Texas while sleet briefly pelted parts of eastern Texas. A weak trough in the central Rockies generated several feet of snow in the highest elevations and brought more than half a foot to parts of the northern and central High Plains. The Far West remained relatively tranquil during the first half of the week, with a weak frontal system bringing light precipitation into the Pacific Northwest. Most of Alaska remained unusually cold, although temperatures were close to normal in north-central and south-central sections while warmer than normal conditions covered southeastern and southwestern parts of the state. Additionally, eastern Hawaii was abnormally cool, with two new record daily lows established on Wednesday.

The last half of the week was somewhat more tranquil. The front in the Southeast was finally pushed out to sea as yet another low pressure system formed along it through eastern Kentucky and Tennessee. This storm tracked through southern Virginia, spreading moderate rains across the lower Northeast and mid-Atlantic as it swept the front into the Atlantic.

Farther south, however, remnants of the frontal system stalled across central Florida, keeping record warmth in southern Florida and generating isolated thunderstorms and a few tornadoes across central sections of the state. In this system's wake, a cold high pressure center spread chilly air across the eastern half of the nation, establishing a few new record daily lows in the southern Plains and bringing the first freeze of the season to portions of the western Carolinas, northwestern Georgia, northern Alabama, northern and central Mississippi, northern Louisiana, and northeastern Texas. As the week ended, an upper-level disturbance blanketed parts of the lower Missouri Valley under as much as three inches of snow. Farther west, strong winds in the central Rockies picked up loose snow, generating near-white-out conditions along portions of Interstate 80. In addition, a strong frontal system invaded the Pacific Northwest, bringing rain and snow (depending on elevation) into the western halves of Washington and Oregon and light precipitation to the Cascades and Sierra Nevadas of California.

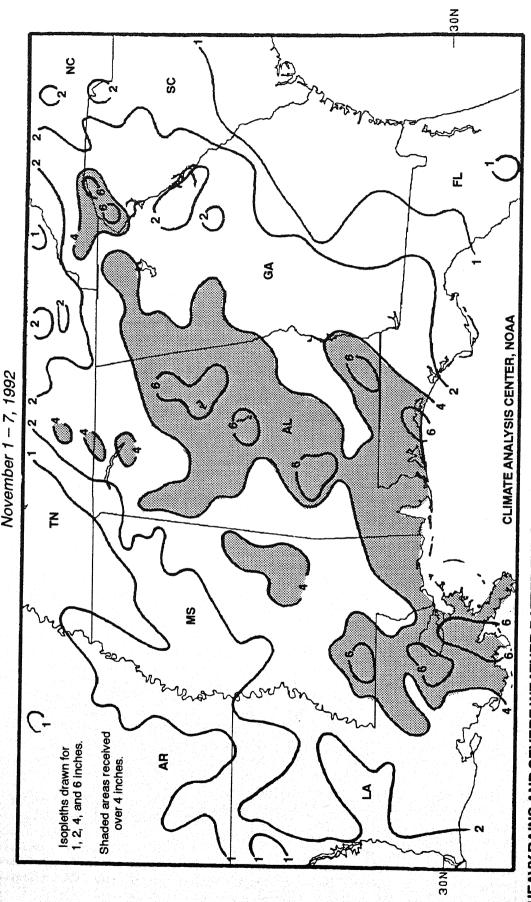
According to the River Forecast Centers, precipitation totals exceeding two inches were widespread through western Washington, central Iowa, the eastern Corn Belt, the southern Lower Mississippi Valley, the central Gulf Coast, Alabama, Mississippi, the northwestern half of Georgia, the western Carolinas, the Virginia Piedmont, north-central Maryland, southern and eastern Pennsylvania, central and northern New Jersey, and south-central Alaska (up to 6.5 inches at Yakutat, AK). Scattered amounts between two and four inches fell on western Oregon, parts of the northern Rockies, northeastern Utah, central and western Colorado, southern and eastern Minnesota, the Great Lakes, the northern lower Mississippi Valley, the eastern Carolinas, the central Appalachians, the rest of Pennsylvania, New York, and northern Vermont. Light to moderate totals were reported through the remainder of the Pacific Northwest, northern California, the remainders of the northern and central Intermountain West and Rockies, the northeastern and north-central Great Plains, the central Mississippi Valley, the Tennessee and Ohio Valleys, central and southern Florida, the rest of the eastern seaboard, and most of Hawaii. Little or no precipitation was observed through most of California, the desert Southwest, the Great Basin, the southern Rockies, most of the High Plains, and the western half of the Great Plains. In addition, all but the southern tier of Alaska was relatively dry.

Above normal temperatures covered only central and southern sections of the West Coast, southern Florida, and parts of the south Atlantic coast. Departures exceeded +3°F in these regions, with some locations in extreme western California and the extreme eastern Carolinas averaging 7°F above normal. Highs reached into the eighties from central Texas northeastward to central North Carolina and across the desert Southwest. Farther west, slightly above normal temperatures covered the eastern half of Hawaii, where some areas averaged up to 2°F above normal, and abnormally mild conditions were observed through southeastern and southwestern Alaska, where departures of +4°F to +6°F were reported.

In sharp contrast, most locations across the Northeast, the Great Lakes, and the nation's midsection from the northern High Plains and southern Rockies eastward through the Mississippi Valley averaged at least 3°F below normal for the week. Departures reached as low as -13°F in eastern Nebraska, where lows dipped into the high teens at a few locations. Subfreezing readings spread southward into north-central Mexico as well as through the northern and central lower Mississippi Valley, where the mercury had soared past 80°F earlier in the week. In addition, weekly departures down to -2°F were observed in the western half of Hawaii while bitterly cold conditions again dominated much of Alaska. Temperatures averaged 12°F below normal at Aniak, AK, and lows plunged to -37°F at Bettles, AK on the first of the month.

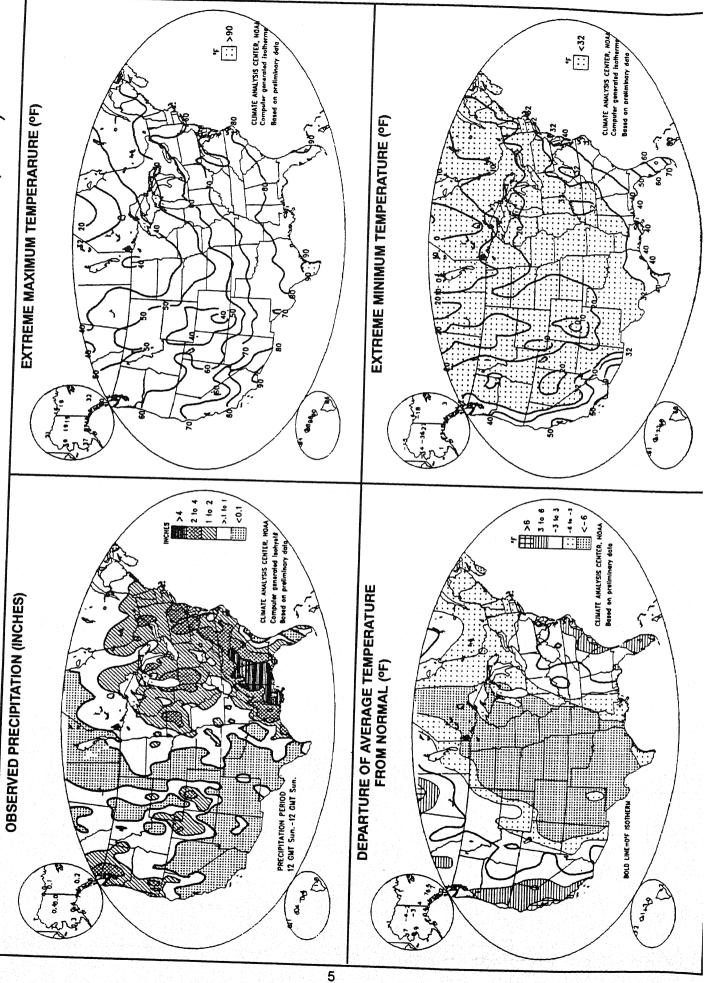
## NORTH AMERICAN HIGHLIGHTS FEATURE

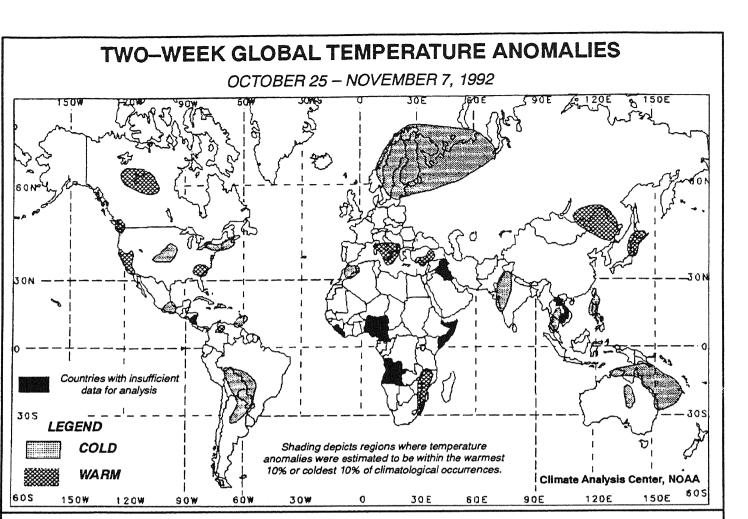
### TOTAL PRECIPITATION



of the Shreveport Regional Airport were damaged by a possible tornado. Yet another round of severe weather tore through much of the region on Wednesday, with high winds HEAVY RAINS AND SEVERE WEATHER BATTER THE CENTRAL GULF COAST AND SOUTHEASTERN U. S. A series of low pressure systems According to press reports, thunderstorms spawned tornadoes in Louisiana that damaged several automobiles and trailers while Lake Charles, LA received over two inches and a few tornadoes damaging trees, cars, and trailers in southern Alabama. In addition, heavy rains generated flash flooding and rapid rises in streams and creeks throughout the Southeast before cooler and drier air swept across most of the area on Thursday. The remnants of the frontal system, however, stalled across central Florida, bringing formed along a frontal system in the Southeast, generating several thunderstorm outbreaks before the complex storm system finally moved into the Atlantic Ocean on Thursday. of rain in 2 1/2 hours on Sunday. Two days later, more thunderstorms pelted portions of eastern Texas and southern Arkansas with large hail, and a few buildings and part solated heavy thundershowers and a few tornadoes to the peninsula during each afternoon for the rest of the week.

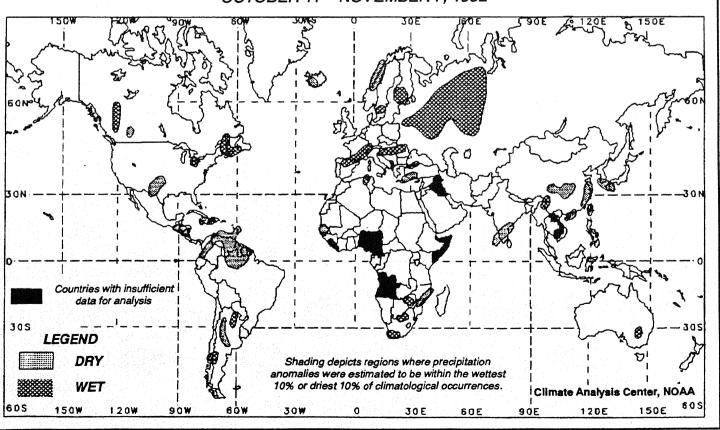
# UNITED STATES WEEKLY CLIMATE CONDITIONS (November 1 – 7, 1992)





### FOUR-WEEK GLOBAL PRECIPITATION ANOMALIES

OCTOBER 11 - NOVEMBER 7, 1992



### UNITED STATES MONTHLY CLIMATE SUMMARY

OCTOBER 1992

October opened with the earliest snow on record at both St. Johnsbury and Burlington, VT. After nearly two dozen record daily highs were set in the north—central states, a blast of cold air brought winter—like conditions to northern portions of the Rockies and Great Plains. Snow blanketed parts of Colorado, Wyoming, Nebraska, and South Dakota, with up to four inches reported in the Black Hills. Subfreezing temperatures dipped as far south as northern Texas while readings in the teens were widespread across the northern Rockies. To the south and east, a low pressure center developed in the Gulf of Mexico and tracked slowly northeastward, generating up to ten inches of rain, wind gusts to 90 mph, and numerous tornadoes across the northern half of Florida. The system then moved through the Southeast and off the South Atlantic coast, spreading moderate to heavy rains across the Carolinas and Georgia.

During the second week of October, another blast of Arctic air plunged southward out of Canada and spread wintry weather across the northern tier of states. Heavy snow blanketed parts of the northern Rockies, northern Plains, and Great Lakes, with up to a foot reported at Red Lodge, MT. More than a dozen record daily lows were set from the Northwest to the northern Plains. In sharp contrast, summerlike warmth dominated much of the Far West and southern Intermountain West. Numerous record daily highs were established as readings soared to the century mark in Arizona and the interior valleys of California. More than four inches of rain soaked southeastern Missouri, causing localized flooding, and strong thunderstorms generated heavy rain, hail, and tornadoes across the southern Plains and Midwest. Heavy rains also inundated portions of Kauai, Hawaii, with more than five inches measured at Lihue. Meanwhile, abnormally cold conditions gripped the eastern half of Alaska as readings dropped below zero.

Cold Canadian air invaded the eastern states during the third week of the month, bringing winterlike weather to the north-eastern quarter of the country. Snow fell from the Great Lakes to the central Appalachians, with up to four inches blanketing northern Michigan and western Pennsylvania. A wintry mixture of sleet and snow was reported as far south as the mountains of North Carolina. Unseasonably cold conditions yielded more than two dozen record daily lows from the Midwest to the mid-Atlantic. Alaska also remained bitterly cold. In sharp contrast, very warm weather dominated the northern Plains and West, where readings soared into the eighties. Meanwhile, thunderstorms pounded the Southwest and southern Plains. More than two inches of rain inundated Kingman, AZ while minor flooding affected Las Vegas, NV.

The month closed with a major winter-type storm affecting the Far West. Heavy rain soaked the northern half of the West Coast while snow blanketed the Cascades and northern Sierra Nevada, with up to 30 inches burying western Nevada near Lake Tahoe. Two weeks of copious precipitation through the northern half of the West Coast and isolated heavy showers in southern California and the desert Southwest got the 1992-1993 wet season off to a good start, with most locations reporting near to above normal rainfall. Farther north, nearly two feet of snow blanketed the mountains near Anchorage as exceptionally cold conditions continued to grip Alaska. Subzero readings were observed in the northern and central parts of the state, yielding several record daily lows. In sharp contrast, summerlike heat baked the southern Plains and lower Mississippi Valley. More than a dozen record daily highs were established as the mercury soared into the nineties. Farther east, strong thunderstorms over Texas and Louisiana generated between two and five inches of rain, strong wind gusts, and hail.

According to the River Forecast Centers, heavy rains (8 to 11 inches) were limited to the northern coast of Washington and

scattered portions of southern South Carolina, eastern Georg and northeastern Florida (figures 1 and 2). Locally heavy rai caused flooding that washed out bridges and undermined railro beds along the eastern portion of the Georgia-South Carolina bo der early in the month. In addition, scattered moderate amour (between two and eight inches) were observed along the northe and central West Coast, in parts of the desert Southwest, through most of the central and eastern Rockies, across the central Gre Plains, in the upper and lower Mississippi Valley, and through mo of the eastern third of the country, except the Ohio Valley. Based preliminary calculations from the National Climatic Data Cent (NCDC), three of the nation's nine regions reported above media precipitation, with the West and Southeast experiencing the 35 and 38th wettest October, respectively, since records began in 189 (page 9). Two southwestern locations reported the wettest Octob on record (table 1). Despite last month's rains, two northwester states (OR and ID) endured one of the ten driest January-October periods on record.

Subnormal precipitation was measured across the Hig Plains, the western Corn Belt, the southern Great Plains, the south western Great Lakes, the Mississippi Delta, southern Florida, the Ohio Valley, and the Northeast (figures 1 and 2). The six region encompassing the northern and central portions of the country reported below median totals, with the South and Central regions experiencing the 19th and 20th driest October on record, respectivel (page 9). Across the 48 contiguous states, October 1992 ranked at the 26th driest such month.

An abnormally warm October was observed across muc of the West and the south-central states, with departures above +4°F reported in parts of the desert Southwest and Great Basin (fig ures 3 and 4). According to NCDC, the five westernmost region reported above median temperatures, with the Southwest and Wes ranking 7th and 11th warmest, respectively (page 11). Arizona en dured the sixth warmest October since records began in 1895, Uta and New Mexico observed the ninth warmest such month, and Wy oming ranked tenth. Nationally (the 48 contiguous states), Octobe was slightly above the median value, ranking as 42<sup>nd</sup> warmest suc month on record. Two California locations and one station in New Mexico experienced the warmest October on record (table 2) while seven places across the northern Rockies and northern Intermoun tain West reported the highest extreme reading ever observed dur ing the month (table 3). In addition, two Hawaiian locations en dured record warmth during October (table 2) as above norma temperatures dominated the eastern half of the islands. Despit several months of near to below normal temperatures across mos of the nation east of the Rockies, the first ten months of 1992 (na tionally) ranked as the 15th warmest such period since 1895, due to the combination of a mild winter (1991-1992) nationwide and per sistent summer and autumn heat in the West (page 12).

In sharp contrast, unseasonably cold weather prevailed across much of the eastern half of the country, with departures dipping below -4°F across the eastern Great Lakes and mid-Atlantic states (figures 3 and 4). Monthly mean temperatures were below the median value in the four easternmost NCDC regions, with the Northeast and Southeast experiencing the 10<sup>th</sup> and 15<sup>th</sup> coldest October in the last 98 years (page 11). Delaware and Connecticut endured the 8<sup>th</sup> coldest such month since records began in 1895 while three states (MA, NY, and SC) had the 9<sup>th</sup> coldest October on record. Bitterly cold conditions plagued Alaska throughout the month as temperatures averaged 3°F to 9°F below normal. The temperature at Fairbanks dropped to -27°F, an October record, or the last day of the month (page 12).

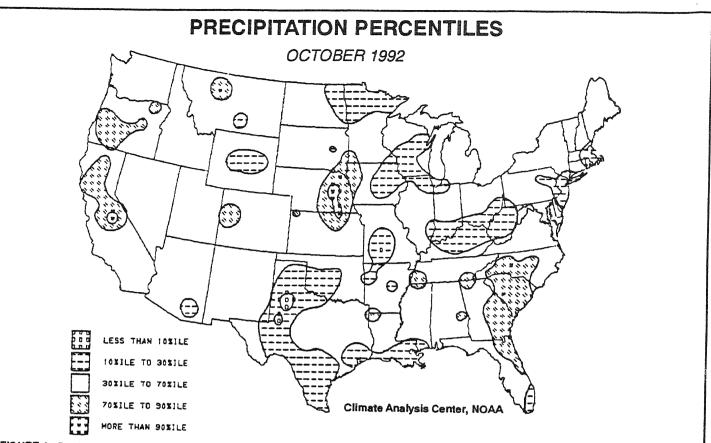


FIGURE 1. October 1992 Precipitation Percentiles. A wet month (>70%ile) was observed in portions of Oregon and northern California, the central Great Plains, and the south Atlantic states, with October totals among the wettest 10% of the historical (1951–1980) distribution in eastern Nebraska. Climatologically significant dryness occurred in the western Great Lakes, Ohio Valley, parts of the northern Plains, and portions of Texas and Louisiana.

### PERCENT OF NORMAL PRECIPITATION

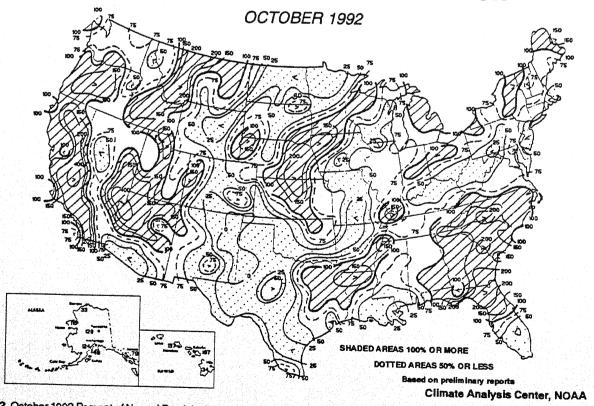
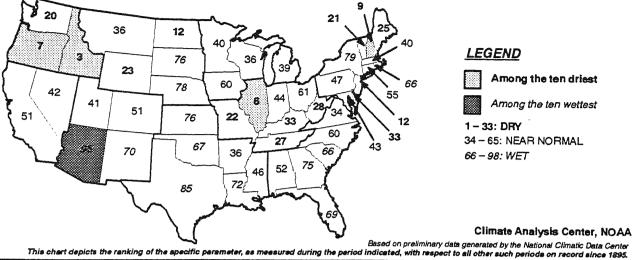
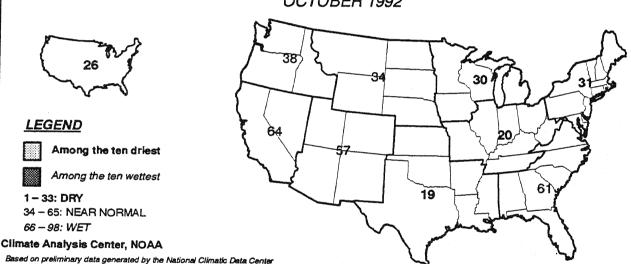


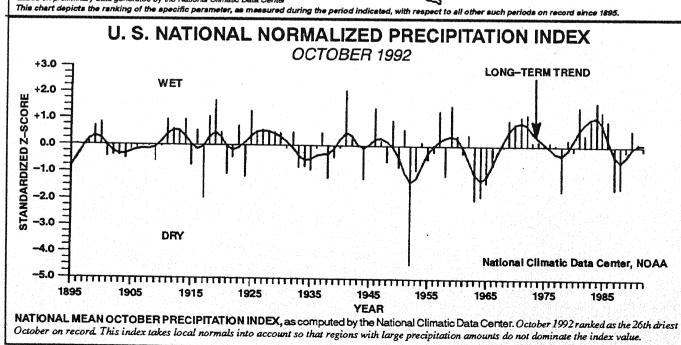
FIGURE 2. October 1992 Percent of Normal Precipitation. Hatched areas received above normal precipitation, and dotted areas reported under half of normal. Above normal precipitation prevailed along the West Coast and across the Intermountain West. In addition, the central Great Plains, lower Mississippi Valley, and Southeast reported greater than normal totals. In contrast, unusually low amounts fell on much of the Rockies, High Plains, and middle Mississippi Valley.

### TEN-MONTH HISTORICAL PRECIPITATION RANKINGS BY STATE JANUARY - OCTOBER 1992 21 21 21 22 21 22 21 25



HISTORICAL PRECIPITATION RANKINGS BY REGION AND NATION
OCTOBER 1992





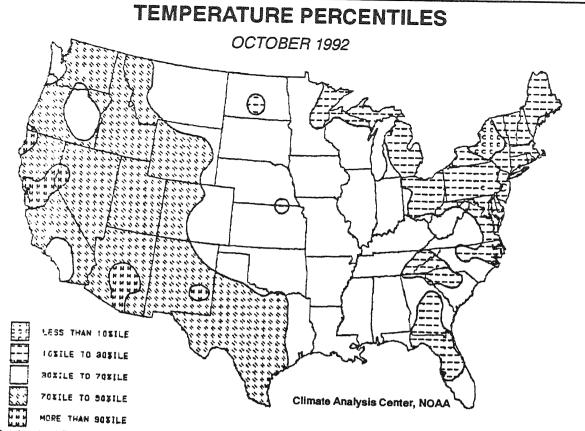


FIGURE 3. October 1992 Temperature Percentiles. Unseasonably warm weather (>70%ile) prevailed across the country west of the Continental Divide and in much of Texas and New Mexico, with parts of Arizona and California in the warmest 10% of the historical distribution. Abnormally cold conditions (<30%ile) dominated the East, with much of New York state among the coldest 10% of the 1951–1980 distribution.

### DEPARTURE OF AVERAGE TEMPERATURE FROM NORMAL (°F)

OCTOBER 1992

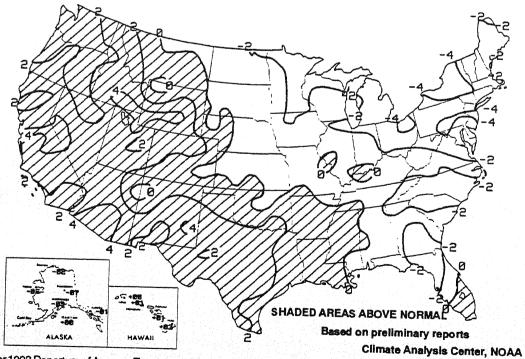
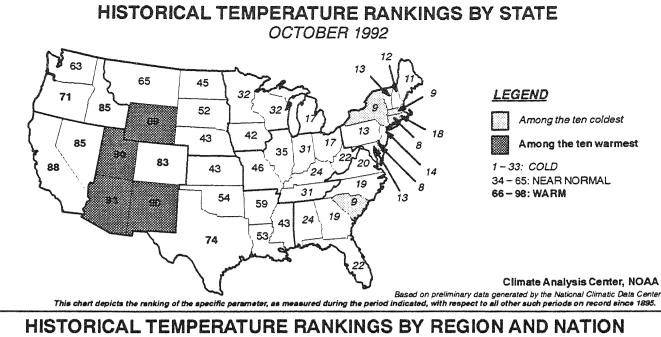
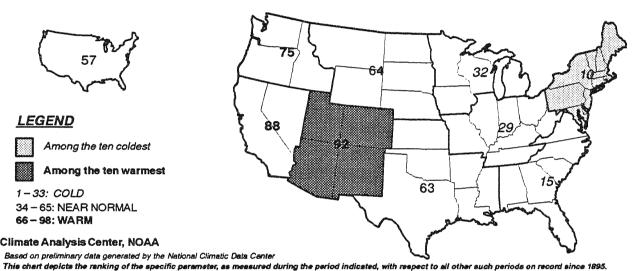


FIGURE 4. October 1992 Departure of Average Temperature from Normal (°F). Isopleths Drawn for -4°F, -2°F, 0°F, +2°F, and +4°F. Warmer than normal conditions covered the western half of the nation, the south-central states, and southern Florida, with departures above +4°F scattered across the desert Southwest of the eastern Great Basin. In contrast, unusually cool weather prevailed across much of the northern Plains and the East, with departures below -4°F recorded in portions



### OCTOBER 1992



TEN-MONTH HISTORICAL TEMPERATURE RANKINGS BY STATE

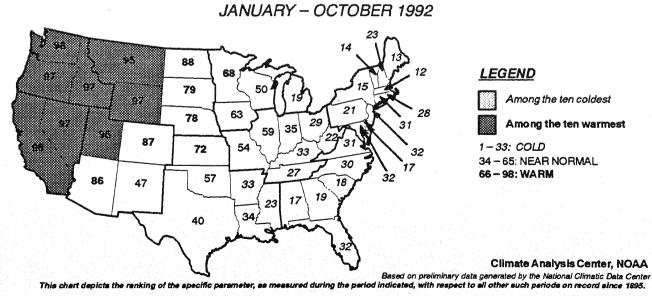
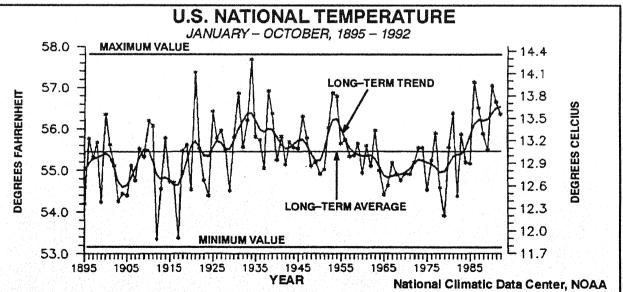


TABLE 1. RECORD OCTOBER PRECIPITATION.							
STATION	TOTAL (IN)	NORMAL (IN)	PCT. OF NORMAL	RECORD TYPE	RECORDS BEGAN		
FRESNO, CA	2.19	0.41	534.1	HIGHEST	1940		
LAS VEGAS, NV	1.22	0.23	530.4	HIGHEST	1937		
MARQUETTE, MI	1.98	3.25	60.9	LOWEST	1979		
HOMER, AK	0.84	3.28	25.6	LOWEST	1951		
INTERNATIONAL FALLS, MN	0.14	1.76	8.0	LOWEST	1939		

NOTE: Trace precipitation is considered ZERO precipitation. Stations with no precipitation are only included if normal precipitation is 0.25 inches or more.

TABLE 2. RECORD OCTOBER AVERAGE TEMPERATURES.						
STATION	DEPARTURE (°F)	AVERAGE (°F)	NORMAL (°F)	RECORD TYPE	RECORDS BEGAN	
SAN FRANCISCO, CA	+4.7	65.3	60.6	HIGHEST	1851	
ROSWELL, NM	+4.5	64.4	59.9	HIGHEST	1951	
EUREKA, CA	+3.8	58.1	54.3	HIGHEST	1886	
MOLOKAI, MOLOKAI, HI	+3.6	79.9	76.3	HIGHEST	1951	
HILO, HAWAII, HI	+2.5	77.9	75.4	HIGHEST	1905	

TABLE 3. RECORD OCTOBER EXTREME TEMPERATURES.							
STATION		EXTREME (°F)	DATE OCCURRED	RECORD TYPE	RECORDS BEGAN		
BOISE, ID		94	OCT 01	HIGHEST	1939		
POCATELLO, ID	SUBSTREE SHARE STOLEN	91	OCT 01	HIGHEST	1950		
GREAT FALLS, MT	3 15 T 17 T 18	91	OCT 01	HIGHEST	1938		
YAKIMA, WA	¥ 4,	88	OCT 01	HIGHEST	1947		
MARQUETTE, MI		87	OCT 02	HIGHEST	1979		
CASPER, WY		87	OCT 01	HIGHEST	1950		
KALISPELL, MT		86	OCT 02	HIGHEST	1950		
ROCKFORD, IL		18	OCT 19	LOWEST	1950		
FAIRBANKS, AK		-27	OCT 31	LOWEST	1930		



NATIONALLY AVERAGED JANUARY – OCTOBER TEMPERATURES, as computed by the National Climatic Data Center. Despite near to below normal temperatures east of the Rockies during the last several months, the first 10 months of 1992 was the seventh consecutive January — October period with readings averaging above the long-term mean (based on 1895–1992). Fueled by a very mild winter nationally, and widespread, persistent summer and autumn heat in the Far West, January — October readings were approximately 0.5°C above the median, ranking as the 15th warmest such period in 98 years of record.